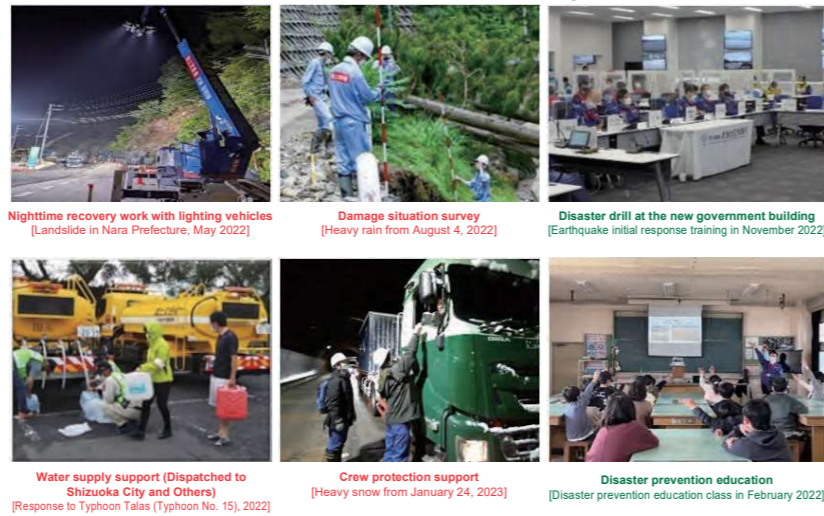


# Safety and Security

## Emergency Disaster Response Task Force (TEC-FORCE)

<Main dispatch achievements>	Number of team members	Total number of members (person-days)
2020 Heavy Rain in July	127	909
2021 Heavy Snow on January 7	45	79
2021 Typhoon Mirinae (Typhoon No. 10)	9	42
2021 Classical swine fever (CSF)	1	1
2021 Record-setting short-time heavy rain in Fukui Prefecture	9	42
2021 Heavy snow from December 25	26	54
2022 Heavy rain from August 4	41	117
2022 Typhoon Nanmadol (Typhoon No. 14)	2	4
2022 Avian influenza	2	2
2023 Heavy snow from January 24	64	116

### Disaster response



### Disaster drills and prevention education

## Measures against great earthquakes and tsunamis in the Nankai Trough

[Damage assumption for directly controlled national highways]

	Flood extension	Significant damage to bridges	Major damage to coastal retaining walls	Debris accumulation
Wakayama Prefecture	Approx. 100 km	53 bridges	Approx. 20 km	Approx. 30 km

### [Road clearing plan]

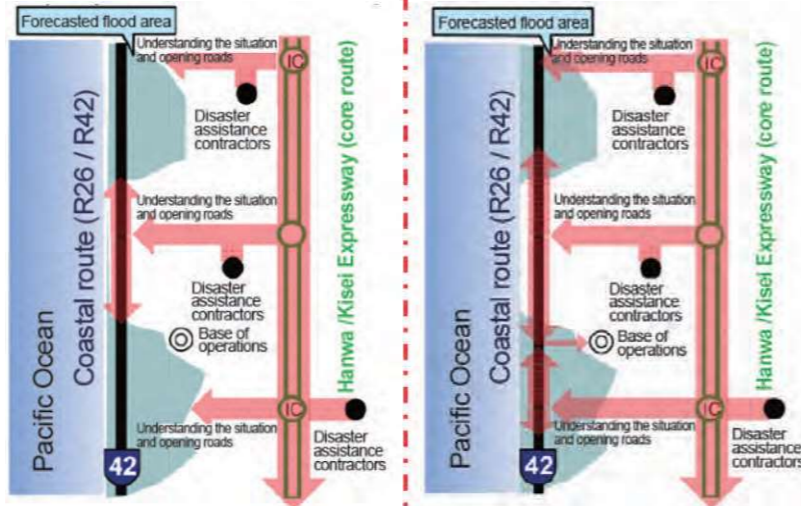
- In the Wakayama Prefecture Road Clearing Plan, based on the assumption of tsunami damage, roads are prioritized for clearing to establish an emergency transportation network. These prioritized roads are designated as "Clearing Routes."
- To ensure rescue and relief routes aimed at saving lives, we set phased objectives for "Road Clearing" operations.

[STEP1 ⇒ Completion within 24 hours after the disaster]

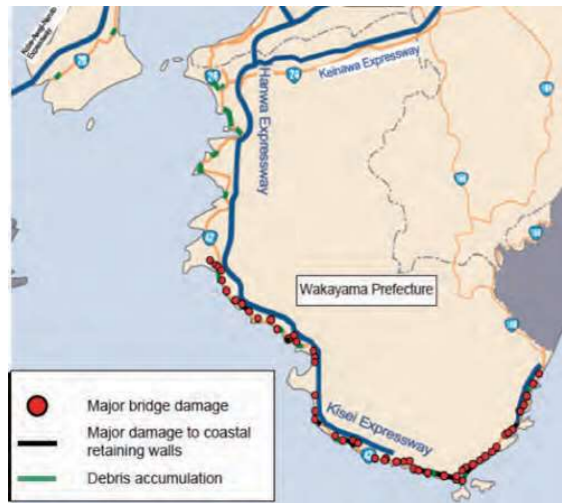
Ensuring trunk routes and routes to coastal areas (outside of flood-prone areas)

[STEP2 ⇒ Completion within 48 hours after the disaster]

Once the tsunami warning has been lifted, securing routes to the base of operations (city hall, etc.)



Surveys by Wakayama and Kinan River National Highway Offices as of May 2014



### [Key Regional Disaster Prevention Base in Sakai Section 3 at Sakai Semboku Port]

- This disaster prevention base plays a crucial role in large-scale disasters caused by earthquakes and tsunamis in the Nankai Trough, including relay and distribution of relief supplies, maritime transport support, assembly and camp functions for wide-area support forces, and disaster medical support functions. It serves as a relaxation space for citizens in normal times.



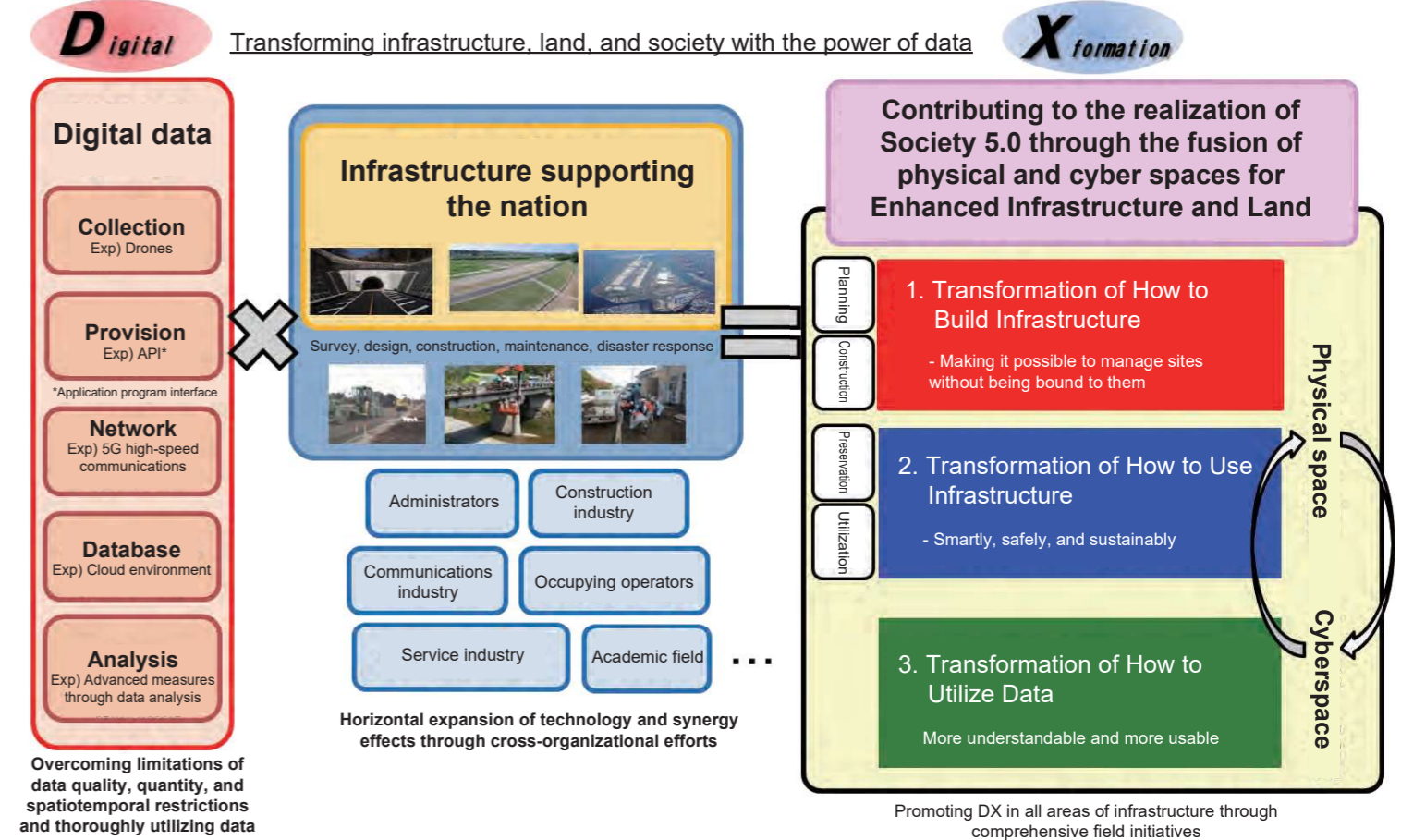
### [Emergency activities at the time of earthquake occurrence]

- Conduct rapid disaster situation surveys using helicopters and CCTV after the disaster and dispatch the TEC-FORCE, coordinating with relevant agencies for drainage activities in tsunami-flooded areas using drainage pump vehicles.



# Infrastructure DX

# Digital transformation in the infrastructure field



Society 5.0: A future society that balances economic development and social issue resolution through a system that highly integrates real and virtual spaces

## Efforts to promote infrastructure DX at the Kinki Regional Development Bureau

### Automated construction at disaster recovery sites

Multiple construction machines operate automatically based on programmed construction conditions

Image of automated construction

Monitoring multiple machines by one person

Automated construction using AR markers

### Automated inspection of hazardous areas by drones

Safe flight through radio relaying

Image of autonomous flight using two drones

Pre-programming flight routes as drones operate beyond the visual line of sight

Autonomous flight beyond visual line of sight is a national first for disaster prevention and infrastructure management

### Remote monitoring and inspection

Promoting a new way of working at construction sites by conducting supervision and inspection using video data

Image of remote presence

Office (Maintenance Bureau officials)

Site (Construction contractor)

Supervisor's confirmation status

Displaying on-site measurement conditions on a monitor

### Use of BIM/CIM (3D) models

Creating a 3D integrated model for geology, surveying, design, etc.

Anytime, anyone can freely share necessary data and consider according to each construction step

High-voltage line

Interference of scaffolding

Considering safety management, such as distance from nearby high-voltage lines